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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,123	03/11/2004	Eric Sanchez	PET-2123	4663
23599 7590 12/27/2006 MILLEN, WHITE, ZELANO & BRANIGAN, P.C. 2200 CLARENDON BLVD. SUITE 1400 ARLINGTON, VA 22201			EXAMINER DOUGLAS, JOHN CHRISTOPHER	
			ART UNIT 1764	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		12/27/2006	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/797,123	SANCHEZ ET AL.	
	Examiner	Art Unit	
	John C. Douglas	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 1 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Examiner acknowledges the response filed on 9/29/2006 containing amendments to the claims, new claims, and remarks.

A new rejection follows, necessitated by amendment:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 2-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carson (US 3470090) in view of Sikonia (US 4167474) and Haag (US 5234575).
2. With respect to claim 14, Carson discloses a reforming process comprising a plurality of fixed bed reactors in series where catalyst can be withdrawn from each of the reactors and regenerated such that the catalyst activity is maintained at a predetermined level (see Carson, column 2, lines 17-24; column 4, lines 56-59, Figure 1 and claim 1).

Carson does not disclose where each reactor operates in a moving bed and where the regenerated catalyst serves at least two reactors from a common distribution zone and once the catalyst leaves the reactors it is mixed and homogenized and then brought into the regeneration zone.

However, Sikonia discloses two reactors with movable catalyst beds and where the catalyst is withdrawn from both reactors and commingled and sent to a common regenerating tower (see Sikonia, claim 1 and Figure 1).

Sikonia discloses that such a process increases operating efficiency and increases effective utilization of catalyst (see Sikonia, column 2, lines 46-51).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Carson to include two reactors with

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movable catalyst beds and where the catalyst is withdrawn from both reactors and commingled and sent to a common regenerating tower in order to increase operating efficiency and effective utilization of catalyst.

Haag teaches that catalysts are uniformly mixed in the system once the process reaches steady state in prior art processes that use a catalyst mixture of two catalysts (see Haag, column 2, lines 40-49).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Carson to include where the catalyst mixture is uniformly mixed because the processes of the prior art that employ mixed catalysts maintain a uniform mixture of catalyst once the process achieves steady state.

3. With respect to claim 2, Sikonia discloses 4 reactors in series (see Sikonia, column 10, lines 55-59 and Figure 1).

4. With respect to claim 3, Carson discloses where each of the reactors in series is supplied with catalyst from the reaction zone (see Carson, column 4, lines 29-38 and Figure 1).

5. With respect to claim 4, Carson in view of Sikonia and Haag do not disclose where the regenerated catalyst is supplied directly only to the first and third reactors, but Sikonia discloses feeding the regenerated catalyst directly to the first and fourth reactors. However, according to *In re Gibson*, 39 F.2d 975 (1930), the selection of any order of mixing ingredients is *prima facie* obvious. Therefore, it would have been obvious to feed the catalyst to the third reactor instead of the fourth reactor because such a modification is simply a change in the order of mixing ingredients.

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6. With respect to claim 5, Sikonia discloses where the regenerated catalyst is supplied to the first reaction zone and the fourth reaction zone and where the second reaction zone is supplied by catalyst from the first reaction zone and the third reaction zone is supplied by catalyst from the second reaction zone (see Sikonia, column 10, lines 55-59, column 11, lines 1-56, column 12, lines 10-22 and Figure 1).
7. With respect to claim 6, Carson discloses where each of the reaction zones are supplied with catalyst (see Carson, column 4, lines 29-38 and Figure 1) and Sikonia discloses where spent catalyst is carried out from the third and fourth reactors only (see Sikonia, column 12, lines 20-28 and 29-36 and Figure 1).
8. With respect to claim 7, Carson discloses where the operating pressure is between 0.2 and 6.9 MPa (35-1000 psig) (see Carson, column 2, lines 66-70).
9. With respect to claim 8, Carson discloses where the H₂/HGC molar ratio is between 1:1 and 10:1 (see Carson, column 2, lines 66-70).
10. With respect to claim 9, Carson discloses where the liquid hourly space velocity is between 0.2 and 10 (see Carson, column 2, lines 66-70).
11. With respect to claims 11 and 12, Sikonia discloses where the reactors that form the series of reactors can be placed side-by-side or stacked vertically (see Sikonia, column 3, lines 33-38).
12. With respect to claim 13, Sikonia discloses that the process can be the reforming reaction of dehydrogenation of naphthenes to aromatics (see Sikonia, column 6, lines 18-20).

13. With respect to claims 15-19, Haag discloses where steady-state operation ensures a uniform mixture of catalyst throughout the system (see Haag, column 2, lines 40-49).

14. With respect to claims 20 and 21, Sikonia discloses where the reduction step can be performed in-situ or as in integral step of a start-up sequence (see Sikonia, column 8, lines 40-45).

Allowable Subject Matter

15. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach or disclose using a portion of the air used in instrumentation for the combustion of coke.

Response to Arguments

Applicant first argues that Carson does not disclose a regenerative reforming process. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir.

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1986). Carson is used to show a reforming process with a series of reactors and Sikonia is added for the teaching of catalyst regeneration.

Next, Applicant argues that Sikonia teaches away from the invention by teaching the separation of the catalyst. However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed....", *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). In the instant case, Sikonia simply states a separation step and the prior art, in Haag, teaches that mixed catalyst systems are maintained uniformly mixed. The separation step of Sikonia is silent as to why it is desired or not desired.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John C. Douglas whose telephone number is 571-272-1087. The examiner can normally be reached on 7:30 A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCD

12/20/2006

